

## REMARKS

Claims 23-26 are pending in the application. In the Office Action mailed June 4, 2008, claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 23-26 are rejected under 35 U.S.C. 102(b) or, alternatively, 35 U.S.C. 103(a) as being anticipated by PCT Pub. Ser. No. WO97/38810 (Notenboom et al., hereinafter “Notenboom”). Claims 23-26 are further rejected under 35 U.S.C. 102(b) or, alternatively, 35 U.S.C. 103(a) as being anticipated by U.S. Pat. No. 5,587,111 (Watanabe et al., hereinafter “Watanabe”).

### **I. Rejections under 35 U.S.C. 112, first paragraph**

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, claim 23 is rejected because allegedly “It is vague and indefinite as to what is ‘electrically isolated nanoparticles’.” The Applicants respectfully traverse the rejection.

As a preliminary matter, the Applicants respectfully note that this newly-raised rejection is rather late, given that the phrase “electrically isolated nanoparticles” has been present in claim 23 since the application was filed and that the present Office Action is the third action in this matter. Furthermore, the Applicants respectfully submit that the term “electrically isolated” is well-known in the art of the invention and has an ordinary meaning that both meets the requirements of precision and clarity and is the meaning clearly intended by the Applicants. In general, it is well understood that the condition of being “electrically isolated” is the condition of being electrically separated from other electrically conductive structures and/or from the environment. This definition supports the term “electrically isolated” as it is used in the Applicants’ claim 23, and as it would be understood by both a person of ordinary skill in the art of the invention and by an ordinary individual in general.

The long-held rule has been that, in the absence of a clear definition of a claim term in the specification, the term will be given its “ordinary” meaning. There is a heavy presumption in favor of the ordinary meaning of claim language, a presumption that can only be overcome by a

clear and unambiguous definition in the specification. Many recent cases have applied the ordinary meaning of a claim term to the interpretation of the scope of the claims even when the term was used in a different context in the specification and the patentee had argued for a different interpretation. The Applicants respectfully submit that the ordinary meaning of “electrically isolated” is clear and precise, both to a person of ordinary skill in the art and to the ordinary individual, and it is this meaning that is clearly intended by the Applicants.

In the Applicants’ specification, it is described that “nanoparticles having desired electrical characteristics are encapsulated within a capping group that is insulative, i.e. physically contains the electrical characteristic and prevents interaction with neighboring particles” [Specification at page 6, lines 5-7]. “Following patterning, the unexposed areas will remain electrically insulative, since removal of the carrier does not affect the integrity of the capping groups” [Specification at page 11, lines 5-8]. This description clearly and unambiguously supports an interpretation of “electrically isolated nanoparticles”, as it is used in the Applicants’ claim 23, that is consistent with the ordinary meaning of the term. The Applicants therefore respectfully request reconsideration and withdrawal of the rejection of claim 23 under 35 U.S.C. 112, second paragraph, as the term “electrically isolated nanoparticles” is fully supported by the Applicants’ written description.

Notwithstanding the foregoing arguments, the Applicants note that amendments made to claim 23 and 24 herein and discussed below have resulted in the removal of the term “electrically isolated nanoparticles” from claims 23 and 24. In as much as the amendments have made the rejection moot, as well as in light of the foregoing arguments, reconsideration and withdrawal of the rejection of claim 23 under 35 U.S.C. 112, second paragraph is respectfully requested.

## **II. Rejections under 35 U.S.C. 102(b)/ 35 U.S.C. 103(a)**

Claims 23-26 are rejected under 35 U.S.C. 102(b) or, alternatively, 35 U.S.C. 103(a) as being anticipated by Notenboom. The Applicants respectfully traverse the rejections. The Applicants’ invention differs from the teaching of Notenboom in several important respects including, among other things, that the Applicants’ invention is a device having a patterned conductive material that is at least partially surrounded by an *insulating region comprising nanoparticles encapsulated within insulative shells*.

In order to more particular claim and point out this aspect of the Applicants' invention, the Applicants have herein amended independent claim 23 to recite that the *insulating region comprises nanoparticles encapsulated within insulative shells*. Support for this amendment is found in the Specification at least at page 4, lines 11-13, and page 6, lines 5-7. Dependent claim 24 is amended to conform the language of claim 24 to the amendment to independent claim 23. No new matter is added by these amendments, entry of which is respectfully requested.

To the extent that the end product of Notenboom can be considered to be a device having sintered conductive material with an insulating region, the insulating region of Notenboom is not comprised of nanoparticles encapsulated within insulative shells. In particular, the Office Action states that "Notenboom is silent about the characteristics of the metal paste outside the irradiated portion" [June 4, 2008 Office Action at Section 3, page 3]. This statement constitutes an acknowledgement that Notenboom does not affirmatively teach the encapsulated nanoparticles of the Applicants. Therefore, the Applicants believe the rejection amounts to an assertion that the "metal paste" of Notenboom *inherently* has the insulative characteristics of the Applicants' claimed nanoparticles encapsulated within insulative shells. The Applicants respectfully disagree with this position.

The standard for a rejection based on inherency is laid out in MPEP 2112. In MPEP 2112 (IV) it states: "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981)." "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted)

The Applicants respectfully contend that, while it is theoretically possible that the metal paste of Notenboom is insulative, there is no evidence that it comprises nanoparticles

encapsulated in insulative shells at all, never mind that it *necessarily* comprises them. Unlike the standard required under the law and articulated in the MPEP, it is not necessarily true that the metal paste of Notenboom comprises nanoparticles encapsulated in insulative shells, and thus it is not an inherent property of the teaching of Notenboom. Notenboom therefore fails to teach the Applicants' claimed limitation "at least one insulating region at least partially surrounding the conductive pattern, the insulating region comprising nanoparticles encapsulated within insulative shells".

Because Notenboom fails to teach device having a patterned conductive material that is at least partially surrounded by an *insulating region comprising nanoparticles encapsulated within insulative shells*, as claimed by the Applicants, Notenboom fails to anticipate or make obvious the Applicants' claimed invention, whether taken alone or in combination, as does all other art of record. The deficiencies of Notenboom are not cured by Watanabe or any other art of record. Reconsideration and withdrawal of the rejection of independent claim 23, as amended, is therefore respectfully requested.

Because claims 24-26 depend from currently amended independent claim 23, which is in condition for allowance, claims 24-26 are also in condition for allowance. Reconsideration and withdrawal of the rejection of claims 24-26 as being anticipated by Notenboom is therefore respectfully requested.

Claims 23-26 are further rejected under 35 U.S.C. 102(b) or, alternatively, 35 U.S.C. 103(a) as being anticipated by Watanabe. The Applicants respectfully traverse the rejections. As discussed above with respect to the teaching of Notenboom, the Applicants' invention also differs from the teaching of Watanabe in several important respects including, among other things, that the Applicants' invention is a device having a patterned conductive material that is at least partially surrounded by an *insulating region comprising nanoparticles encapsulated within insulative shells*. To the extent that the end product of Watanabe can be considered to be a device having sintered conductive material with an insulating region, the insulating region of Watanabe is not comprised of nanoparticles encapsulated within insulative shells. Watanabe therefore fails to anticipate or make obvious the Applicants' invention, because Watanabe fails to teach a device having a patterned conductive material that is at least partially surrounded by an *insulating region comprising nanoparticles encapsulated within insulative shells*.

In particular, the Office Action states that “Watanabe is silent about the area of the metal paste that was not sintered” [June 4, 2008 Office Action at Section 4, page 4]. This statement constitutes an acknowledgement that Watanabe does not affirmatively teach the encapsulated nanoparticles of the Applicants. Therefore, the Applicants believe the rejection amounts to an assertion that the “metal paste” of Watanabe *inherently* has the insulative characteristics of the Applicants’ claimed nanoparticles encapsulated within insulative shells. The Applicants respectfully disagree with this position.

The Applicants respectfully contend that, as with Notenboom, while it is possible that the metal paste of Watanabe is insulative, there is no evidence that it comprises nanoparticles encapsulated in insulative shells at all, never mind that it *necessarily* comprises them. As it is not necessarily true that the metal paste of Watanabe comprises nanoparticles encapsulated in insulative shells, it is thus not an inherent property of the teaching of Watanabe. Watanabe therefore fails to teach the Applicants’ claimed limitation “at least one insulating region at least partially surrounding the conductive pattern, the insulating region comprising nanoparticles encapsulated within insulative shells”.

Because Watanabe fails to teach an insulating region comprising nanoparticles encapsulated within insulative shells as claimed by the Applicants, Watanabe fails to anticipate or make obvious the Applicants’ claimed invention, whether taken alone or in combination, as does all other art of record. The deficiencies of Watanabe are not cured by Notenboom or any other art of record, which fail to anticipate or make obvious the Applicants’ invention, whether taken alone or in combination. Reconsideration and withdrawal of the rejection of independent claim 23, as amended, is therefore respectfully requested.

Because claims 24-26 depend from currently amended independent claim 23, which is in condition for allowance, claims 24-26 are also in condition for allowance. Reconsideration and withdrawal of the rejection of claims 24-26 as being anticipated by Watanabe is therefore respectfully requested.

### **III. Conclusion**

Claims 23-26 are pending in the application. Claims 23 and 24 have been amended. No new matter is added by these amendments. The Applicants respectfully submit that claims 23-26

are now in condition for allowance, which action is now requested. For this reason, and in view of the foregoing arguments, the Applicants believe that this application is now in condition for allowance, which action is earnestly solicited. Should there remain any unresolved issues, it is respectfully requested that the Examiner telephone Norma E. Henderson, Applicants' Attorney, at 603-437-4400, so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,



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December 4, 2008

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